

South American Nutria Destroy Marsh Habitat

Through a collaborative partnership with the State of Maryland and the US Fish and Wildlife Service, USGS Patuxent Wildlife Research Center scientists are investigating the role of South American nutria in the extensive loss of marsh at the Blackwater National Wildlife Refuge. Findings indicate that overpopulation and destructive foraging habits are accelerating marsh loss.

INTRODUCTION

Accidentally introduced to Maryland's eastern shore marshes in the early 1940s, the South American nutria (*Myocastor coypus*) established large populations that are implicated in the loss of emergent brackish marsh. Areas dominated by the plant *Olney 3-square* (*Scirpus americanus*) are disappearing along the Blackwater River and adjacent river systems in Dorchester County. Loss of marsh has coincided with introduction and expansion of the nutria population. Marsh loss was noticeable in the region from photographs as early as the 1950s and has accelerated to the present. The effect of nutria foraging on marsh vegetation has escalated over the past two decades with a severe decline in fur values and lack of incentive to harvest animals by traditional trapping methods. A recent study found that within the US Fish and Wildlife Service's Blackwater National Wildlife Refuge alone, **over 6 square miles of marsh have been lost to open water since 1938 and 53 percent of remaining marsh has suffered significant damage and will likely be lost in the near future.**



Marsh loss along the Blackwater River in Dorchester County, Maryland, has accelerated since the 1950s. What was once continuous marshland now appears as fragmented remnants (above). Over 6 square miles of marsh have been lost to open water since 1938.



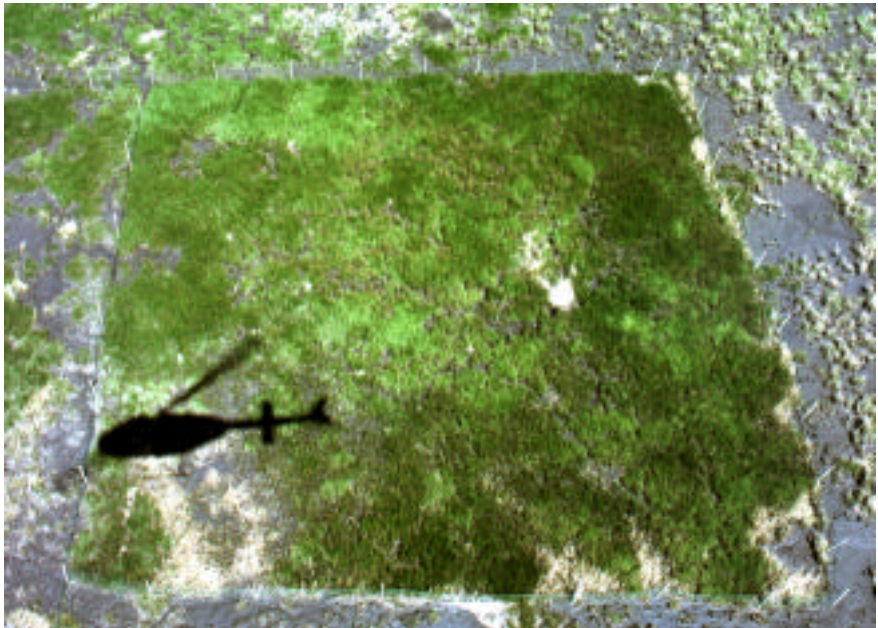
Nutria are large (8-18 lb) beaver-like rodents introduced from South America. Overpopulation has resulted from a decline in the fur industry and a lack of any other apparent market for the animals. Nutria are 5 to 10 times as large as our native muskrat.

A USGS, MARYLAND-DNR, US FISH AND WILDLIFE SERVICE PARTNERSHIP

The USGS Patuxent Wildlife Research Center, Maryland Department of Natural Resources, and Blackwater National Wildlife Refuge teamed up in 1995 to investigate the relationship between nutria foraging activity and marsh loss. The resulting study is using large fenced exclosures to experimentally test whether removal of nutria can stabilize or recover emergent vegetation. Twenty large 100 ft x 100 ft exclosures were established in

the marsh requiring 1.5 miles of fencing; an additional 38 unfenced control plots also were established. Vegetative response was monitored through spring and fall measurements of 346 fixed subplots and aerial photography of whole plots.

Preliminary results following one growing season indicate moderate expansion of vegetation in fenced exclosures and continued decline of vegetation in unfenced controls. This is the first scientific evidence that 1) nutria activity is directly contributing to marsh loss in Maryland, and 2) the marsh has some capacity to recover in the absence of nutria. However,

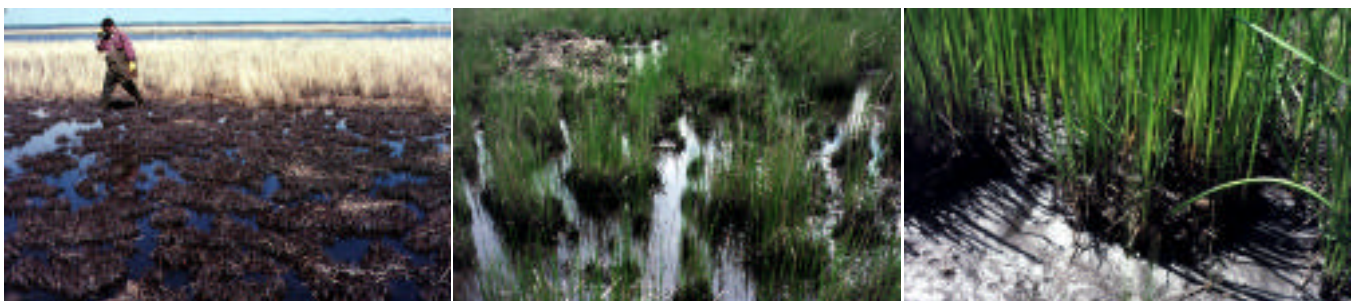


Large 100 ft x 100 ft exclosure, showing good recovery of vegetation in the absence of nutria grazing.

because of the vulnerability of the denuded marsh surface to erosion, it appears that only partial recovery of marsh vegetation is possible without some restoration action to fill in eroded areas or otherwise raise the marsh surface to a level that allows plants to grow. A number of growing seasons is required before more definitive statements about recovery potential are possible. The overabundance of nutria, the extensive loss of marsh, and the failure of traditional harvest methods to control nutria numbers have prompted the Maryland Department of Natural Resources to consider a program of eradication for this invasive, exotic species.



Nutria sign is everywhere in the marsh, including abundant tracks (left), foraging "eatout" areas (center, right). All are testimony to an overabundance of nutria in this marsh.



Foraging directly on the root mat of vegetation, nutria cut up the marsh into finer and finer fragments (left, center). Erosion by tidal currents and wave action lowers denuded marsh surface and inhibits plant recolonization (right).